

SEQUENCE LISTING

<110> Bandman, Olga
 Tang, Y. Tom
 Hillman, Jennifer L.
 Yue, Henry
 Guegler, Karl J.
 Corley, Neil C.
 Gorgone, Gina
 Azimzai, Yalda
 Lu, Aina

<120> Protein Kinase Homologs

<130> PF-0614 US

<140> To Be Assigned

<141> Herewith

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<170> PERL Program

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Ala	Glu	Asp	Ser	Gly	Leu	Arg	Leu	Asp	Gly	Gly	Ser	Gly	Ser	Thr	40	45	50	55
Ser	Ser	Ser	Gly	Cys	His	Pro	Gly	Gly	Ala	Arg	Ala	Gly	Pro	Ser	60	65	70	75
Pro	Ala	Ser	Ser	Ser	Pro	Ala	Pro	Gly	Gly	Gly	Arg	Ser	Leu	Ser	80	85	90	95
Ala	Gly	Ser	Gln	Thr	Ser	Gly	Phe	Ser	Gly	Ser	Leu	Phe	Ser	Pro	100	105	110	115
Ala	Ser	Cys	Ser	Ile	Leu	Ser	Gly	Ser	Ser	Asn	Gln	Arg	Glu	Thr	120	125	130	135
Gly	Gly	Leu	Leu	Ser	Pro	Ser	Thr	Pro	Phe	Gly	Ala	Ser	Asn	Leu	140	145	150	155
Leu	Val	Asn	Pro	Leu	Glu	Pro	Gln	Asn	Ala	Asp	Lys	Ile	Lys	Ile	160	165	170	175
Lys	Ile	Ala	Asp	Leu	Gly	Asn	Ala	Cys	Trp	Val	His	Lys	His	Phe	180	185	190	195
Thr	Glu	Asp	Ile	Gln	Thr	Arg	Gln	Tyr	Arg	Ala	Val	Glu	Val	Leu	200	205	210	215
Ile	Gly	Ala	Glu	Tyr	Gly	Pro	Pro	Ala	Asp	Ile	Trp	Ser	Thr	Ala	220	225	230	235
Cys	Met	Ala	Phe	Glu	Leu	Ala	Thr	Gly	Asp	Tyr	Leu	Phe	Glu	Pro	240	245	250	255
His	Ser	Gly	Glu	Asp	Tyr	Ser	Arg	Asp	Glu	Asp	His	Ile	Ala	His	250	255	260	265
Ile	Val	Glu	Leu	Leu	Gly	Asp	Ile	Pro	Pro	Ala	Phe	Ala	Leu	Ser	265	270	275	280
Gly	Arg	Tyr	Ser	Arg	Glu	Phe	Phe	Asn	Arg	Arg	Gly	Glu	Leu	Arg	280	285	290	295
His	Ile	His	Asn	Leu	Lys	His	Trp	Gly	Leu	Tyr	Glu	Val	Leu	Met	295	300	305	310

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Glu	Lys	Tyr	Glu	Trp	Pro	Leu	Glu	Gln	Ala	Thr	Gln	Phe	Ser	Ala	
				260					265					270	
Phe	Leu	Leu	Pro	Met	Asn	Glu	Tyr	Ile	Pro	Glu	Lys	Arg	Ala	Ser	
				275					280					285	
Ala	Arg	Asp	Cys	Leu	Gln	His	Pro	Trp	Leu	Gln	Pro				
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Gln	Leu	Ser	Gly	Ser	Pro	Trp	Ile	Leu	Leu	Arg	Glu	Asn	Glu	Val	
				20					25					30	
Ser	Thr	Leu	Tyr	Lys	Gly	Glu	Tyr	His	Arg	Ala	Pro	Val	Ala	Ile	
				35					40					45	
Lys	Val	Phe	Lys	Lys	Leu	Gln	Ala	Gly	Ser	Ile	Ala	Ile	Val	Arg	
				50					55					60	
Gln	Thr	Phe	Asn	Lys	Glu	Ile	Lys	Thr	Met	Lys	Lys	Phe	Glu	Ser	
				65					70					75	
Pro	Asn	Ile	Leu	Arg	Ile	Phe	Gly	Ile	Cys	Ile	Asp	Glu	Thr	Val	
				80					85					90	
Thr	Pro	Pro	Gln	Phe	Ser	Ile	Val	Met	Glu	Tyr	Cys	Glu	Leu	Gly	
				95					100					105	
Thr	Leu	Arg	Glu	Leu	Leu	Asp	Arg	Glu	Lys	Asp	Leu	Thr	Leu	Gly	
				110					115					120	
Lys	Arg	Met	Val	Leu	Val	Leu	Gly	Ala	Ala	Arg	Gly	Leu	Tyr	Arg	
				125					130					135	
Leu	His	His	Ser	Glu	Ala	Pro	Glu	Leu	His	Gly	Lys	Ile	Arg	Ser	
				140					145					150	
Ser	Asn	Phe	Leu	Val	Thr	Gln	Gly	Tyr	Gln	Val	Lys	Leu	Ala	Gly	
				155					160					165	
Phe	Glu	Leu	Arg	Lys	Thr	Gln	Thr	Ser	Met	Ser	Leu	Gly	Thr	Thr	
				170					175					180	
Arg	Glu	Lys	Thr	Asp	Arg	Val	Lys	Ser	Thr	Ala	Tyr	Leu	Ser	Pro	
				185					190					195	
Gln	Glu	Leu	Glu	Asp	Val	Phe	Tyr	Gln	Tyr	Asp	Val	Lys	Ser	Glu	
				200					205					210	
Ile	Tyr	Ser	Phe	Gly	Ile	Val	Leu	Trp	Glu	Ile	Ala	Thr	Gly	Asp	
				215					220					225	
Ile	Pro	Phe	Gln	Gly	Cys	Asn	Ser	Glu	Lys	Ile	Arg	Lys	Leu	Val	
				230					235					240	
Ala	Val	Lys	Arg	Gln	Gln	Glu	Pro	Leu	Gly	Glu	Asp	Cys	Pro	Ser	
				245					250					255	
Glu	Leu	Arg	Glu	Ile	Ile	Asp	Glu	Cys	Arg	Ala	His	Asp	Pro	Ser	
				260					265					270	
Val	Arg	Pro	Ser	Val	Asp	Glu	Ile	Leu	Lys	Lys	Leu	Ser	Thr	Phe	
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Asn	Ile	Asp	Val	Cys	Glu	Asn	Cys	His	Tyr	Pro	Ile	Val	Pro	Leu
				20					25					30
Asp	Gly	Lys	Gly	Thr	Leu	Leu	Ile	Arg	Asn	Gly	Ser	Glu	Val	Arg
				35					40					45
Asp	Pro	Leu	Val	Thr	Tyr	Glu	Gly	Ser	Asn	Pro	Pro	Ala	Ser	Pro
				50					55					60
Leu	Gln	Asp	Asn	Leu	Val	Ile	Ala	Leu	His	Ser	Tyr	Glu	Pro	Ser
				65					70					75
His	Asp	Gly	Asp	Leu	Gly	Phe	Glu	Lys	Gly	Glu	Gln	Leu	Arg	Ile
				80					85					90
Leu	Glu	Gln	Ser	Gly	Glu	Trp	Trp	Lys	Ala	Gln	Ser	Leu	Thr	Thr
				95					100					105
Gly	Gln	Glu	Gly	Phe	Ile	Pro	Phe	Asn	Phe	Val	Ala	Lys	Ala	Asn
				110					115					120
Ser	Leu	Glu	Pro	Glu	Ala	Asn	Leu	Met	Lys	Gln	Leu	Gln	His	Gln
				125					130					135
Arg	Leu	Val	Arg	Leu	Tyr	Ala	Val	Val	Thr	Gln	Glu	Pro	Ile	Tyr
				140					145					150
Ile	Ile	Thr	Glu	Tyr	Met	Glu	Asn	Gly	Ser	Leu	Val	Asp	Phe	Leu
				155					160					165
Lys	Thr	Pro	Ser	Gly	Ile	Lys	Leu	Thr	Ile	Asn	Lys	Leu	Leu	Asp
				170					175					180
Met	Ala	Ala	Gln	Ile	Ala	Glu	Gly	Met	Ala	Phe	Ile	Glu	Glu	Arg
				185					190					195
Asn	Tyr	Ile	His	Arg	Asp	Leu	Arg	Ala	Ala	Asn	Ile	Leu	Val	Ser
				200					205					210
Asp	Thr	Leu	Ser	Cys	Lys	Ile	Ala	Asp	Phe	Gly	Leu	Ala	Arg	Leu
				215					220					225
Ile	Glu	Asp	Asn	Glu	Tyr	Thr	Ala	Arg	Glu	Gly	Ala	Lys	Phe	Pro
				230					235					240
Ile	Lys	Trp	Thr	Ala	Pro	Glu	Ala	Ile	Asn	Tyr	Gly	Thr	Phe	Thr
				245					250					255
Ile	Lys	Ser	Asp	Val	Trp	Ser	Phe	Gly	Ile	Leu	Leu	Thr	Glu	Ile
				260					265					270
Val	Thr	His	Gly	Arg	Ile	Pro	Tyr	Pro	Gly	Met	Thr	Asn	Pro	Glu
				275					280					285
Val	Ile	Gln	Asn	Leu	Glu	Arg	Gly	Tyr	Arg	Met	Val	Arg	Pro	Asp
				290					295					300
Asn	Cys	Pro	Glu	Glu	Leu	Tyr	Gln	Leu	Met	Arg	Leu	Cys	Trp	Lys
				305					310					315
Glu	Arg	Pro	Glu	Asp	Arg	Pro	Thr	Phe	Asp	Tyr	Leu	Arg	Ser	Val
				320					325					330
Leu	Glu	Asp	Phe	Phe	Thr	Ala	Thr	Glu	Gly	Gln	Tyr	Gln	Pro	Gln
				335					340					345
Pro														

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Ala	Glu	Leu	Phe	Phe	Lys	Asp	Asp	Pro	Glu	Lys	Leu	Phe	Ser	Asp	
				20					25					30	
Leu	Arg	Glu	Ile	Gly	His	Gly	Ser	Phe	Gly	Ala	Val	Tyr	Phe	Ala	
				35					40					45	
Arg	Asp	Val	Arg	Asn	Ser	Glu	Val	Val	Ala	Ile	Lys	Lys	Met	Ser	
				50					55					60	
Tyr	Ser	Gly	Lys	Gln	Ser	Asn	Glu	Lys	Trp	Gln	Asp	Ile	Ile	Lys	
				65					70					75	
Glu	Val	Arg	Arg	Arg	Arg	Arg	Val	Gly	Arg	Glu	Asp	Glu	Glu	Arg	
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Val	Ile	Gly	Lys	Gly	Phe	Glu	Asp	Leu	Met	Thr	Val	Asn	Leu	Ala	
				20					25					30	
Arg	Tyr	Lys	Pro	Thr	Gly	Glu	Tyr	Val	Thr	Val	Arg	Arg	Ile	Asn	
				35					40					45	
Leu	Glu	Ala	Cys	Ser	Asn	Glu	Met	Val	Thr	Phe	Leu	Gln	Gly	Glu	
				50					55					60	
Leu	His	Val	Ser	Lys	Leu	Phe	Asn	His	Pro	Asn	Ile	Val	Pro	Tyr	
				65					70					75	
Arg	Ala	Thr	Phe	Ile	Ala	Asp	Asn	Glu	Leu	Trp	Val	Val	Thr	Ser	
				80					85					90	
Phe	Met	Ala	Tyr	Gly	Ser	Ala	Lys	Asp	Leu	Ile	Cys	Thr	His	Phe	
				95					100					105	
Met	Asp	Gly	Met	Asn	Glu	Leu	Ala	Ile	Ala	Tyr	Ile	Leu	Gln	Gly	
				110					115					120	
Val	Leu	Lys	Ala	Leu	Asp	Tyr	Ile	His	His	Met	Gly	Tyr	Val	His	
				125					130					135	
Arg	Ser	Val	Lys	Ala	Ser	His	Ile	Leu	Ile	Ser	Val	Asp	Gly	Lys	
				140					145					150	
Val	Tyr	Leu	Ser	Gly	Leu	Arg	Thr	Thr	Leu	Ser	Met	Ile	Ser	His	
				155					160					165	
Gly	Gln	Arg	Gln	Arg	Val	Val	His	Asp	Phe	Pro	Lys	Tyr	Ser	Val	
				170					175					180	
Lys	Val	Leu	Pro	Trp	Leu	Ser	Pro	Glu	Val	Leu	Gln	Gln	Asn	Leu	
				185					190					195	
Gln	Gly	Tyr	Asp	Ala	Lys	Ser	Asp	Ile	Tyr	Ser	Val	Gly	Ile	Thr	
				200					205					210	
Ala	Cys	Glu	Leu	Ala	Asn	Gly	His	Val	Pro	Phe	Lys	Asp	Met	Pro	
				215					220					225	
Ala	Thr	Gln	Met	Leu	Leu	Glu	Lys	Leu	Asn	Gly	Thr	Val	Pro	Cys	
				230					235					240	
Leu	Leu	Asp	Thr	Ser	Thr	Ile	Pro	Ala	Glu	Glu	Leu	Thr	Met	Ser	
				245					250					255	
Pro	Ser	Arg	Ser	Val	Ala	Asn	Ser	Gly	Leu	Ser	Asp	Ser	Leu	Thr	
				260					265					270	
Thr	Ser	Thr	Pro	Arg	Pro	Ser	Asn	Gly	Asp	Ser	Pro	Ser	His	Pro	
				275					280					285	
Tyr	His	Arg	Thr	Phe	Ser	Pro	His	Phe	His	His	Phe	Val	Glu	Gln	
				290					295					300	
Cys	Leu	Gln	Arg	Asn	Pro	Asp	Ala	Arg	Tyr	Pro	Cys	Trp	Pro	Gly	
				305					310					315	
Pro	Gly	Leu	Arg	Glu	Ser	Arg	Gly	Cys	Ser	Gly	Gly				
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Gly	Lys	Ala	Ile	Leu	Val	Lys	Ser	Thr	Glu	Asp	Gly	Arg	Gln	Tyr
				20					25					30
Val	Ile	Lys	Glu	Ile	Asn	Ile	Ser	Arg	Met	Ser	Ser	Lys	Glu	Arg
				35					40					45
Glu	Glu	Ser	Arg	Arg	Glu	Val	Ala	Val	Leu	Ala	Asn	Met	Lys	His
				50					55					60
Pro	Asn	Ile	Val	Gln	Tyr	Arg	Glu	Ser	Phe	Glu	Gly	Ile	Leu	Asp
				65					70					75
Trp	Phe	Val	Gln	Ile	Cys	Leu	Ala	Leu	Lys	His	Val	His	Asp	Arg
				80					85					90
Lys	Ile	Leu	His	Arg	Asp	Ile	Lys	Ser	Gln	Asn	Ile	Phe	Leu	Thr
				95					100					105
Lys	Asp	Gly	Thr	Val	Gln	Leu	Gly	Asp	Phe	Gly	Ile	Ala	Arg	Val
				110					115					120
Leu	Asn	Ser	Thr	Val	Glu	Leu	Ala	Arg	Thr	Cys	Ile	Gly	Thr	Pro
				125					130					135
Tyr	Tyr	Leu	Ser	Pro	Glu	Ile	Cys	Glu	Asn	Lys	Pro	Tyr	Asn	Asn
				140					145					150
Lys	Ser	Asp	Ile	Trp	Ala	Leu	Gly	Cys	Val	Leu	Tyr	Glu	Leu	Cys
				155					160					165
Thr	Leu	Lys	His	Ala	Phe	Glu	Ala	Gly	Ser	Met	Lys	Asn	Leu	Val
				170					175					180
Leu	Lys	Ile	Ile	Ser	Gly	Ser	Phe	Pro	Pro	Val	Ser	Leu	His	Tyr
				185					190					195
Ser	Tyr	Asp	Leu	Arg	Ser	Leu	Val	Ser	Gln	Leu	Phe	Lys	Arg	Asn
				200					205					210
Pro	Arg	Asp	Arg	Pro	Ser	Val	Asn	Ser	Ile	Leu	Glu	Lys	Gly	Phe
				215					220					225
Ile	Ala	Lys	Arg	Ile	Glu	Lys	Phe	Leu	Ser	Pro	Gln	Leu	Ile	Ala
				230					235					240
Glu	Glu	Phe	Cys	Leu	Lys	Thr	Phe	Ser	Lys	Phe	Gly	Ser	Gln	Pro
				245					250					255
Ile	Pro	Ala	Lys	Arg	Pro	Ala	Ser	Gly	Gln	Asn	Ser	Ile	Ser	Val
				260					265					270
Met	Pro	Ala	Gln	Lys	Ile	Thr	Lys	Pro	Ala	Ala	Lys	Tyr	Gly	Ile
				275					280					285
Pro	Leu	Ala	Tyr	Lys	Lys	Tyr	Gly	Asp	Lys	Lys	Leu	His	Glu	Lys
				290					295					300
Lys	Pro	Leu	Gln	Lys	His	Lys	Gln	Ala	His	Gln	Thr	Pro	Glu	Lys
				305					310					315
Arg	Val	Asn	Thr	Gly	Glu	Glu	Arg	Arg	Lys	Ile	Ser	Glu	Glu	Ala
				320					325					330
Ala	Arg	Lys	Arg	Arg	Leu	Glu	Phe	Ile	Glu	Lys	Asp	Lys	Glu	Arg
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Phe	Lys	Phe	Cys	Pro	Tyr	Cys	Gly	Asn	Ser	Leu	Pro	Val	Glu	Glu	
				20					25					30	
His	Val	Gly	Ser	Gln	Thr	Phe	Val	Asn	Pro	His	Val	Ser	Ser	Phe	
				35					40					45	
Gln	Gly	Ser	Gly	Ser	Arg	Pro	Pro	Thr	Pro	Lys	Ser	Ser	Pro	Gln	
				50					55					60	
Lys	Thr	Arg	Lys	Ser	Pro	Gln	Val	Thr	Arg	Gly	Ser	Pro	Gln	Lys	
				65					70					75	
Thr	Ser	Cys	Ser	Pro	Gln	Lys	Thr	Arg	Gln	Ser	Pro	Gln	Thr	Leu	
				80					85					90	
Lys	Arg	Ser	Arg	Val	Thr	Thr	Ser	Leu	Glu	Ala	Leu	Pro	Thr	Gly	
				95					100					105	
Thr	Val	Leu	Thr	Asp	Lys	Ser	Gly	Arg	Gln	Trp	Lys	Leu	Lys	Ser	
				110					115					120	
Phe	Gln	Thr	Arg	Asp	Asn	Gln	Gly	Ile	Leu	Tyr	Glu	Ala	Ala	Pro	
				125					130					135	
Thr	Ser	Thr	Leu	Thr	Cys	Asp	Ser	Gly	Pro	Gln	Lys	Gln	Lys	Phe	
				140					145					150	
Ser	Leu	Lys	Leu	Asp	Ala	Lys	Asp	Gly	Arg	Leu	Phe	Asn	Glu	Gln	
				155					160					165	
Asn	Phe	Phe	Gln	Arg	Ala	Ala	Lys	Pro	Leu	Gln	Val	Asn	Lys	Trp	
				170					175					180	
Lys	Lys	Leu	Tyr	Ser	Thr	Pro	Leu	Leu	Ala	Ile	Pro	Thr	Cys	Met	
				185					190					195	
Gly	Phe	Gly	Val	His	Gln	Asp	Lys	Tyr	Arg	Phe	Leu	Val	Leu	Pro	
				200					205					210	
Ser	Leu	Gly	Arg	Ser	Leu	Gln	Ser	Ala	Leu	Asp	Val	Ser	Pro	Lys	
				215					220					225	
His	Val	Leu	Ser	Glu	Arg	Ser	Val	Leu	Gln	Val	Ala	Cys	Arg	Leu	
				230					235					240	
Leu	Asp	Ala	Leu	Glu	Phe	Leu	His	Glu	Asn	Glu	Tyr	Val	His	Gly	
				245					250					255	
Asn	Val	Thr	Ala	Glu	Asn	Ile	Phe	Val	Asp	Pro	Glu	Asp	Gln	Ser	
				260					265					270	
Gln	Val	Thr	Leu	Ala	Gly	Tyr	Gly	Phe	Ala	Phe	Arg	Tyr	Cys	Pro	
				275					280					285	
Ser	Gly	Lys	His	Val	Ala	Tyr	Val	Glu	Gly	Ser	Arg	Ser	Pro	His	
				290					295					300	
Glu	Gly	Asp	Leu	Glu	Phe	Ile	Ser	Met	Asp	Leu	His	Lys	Gly	Cys	
				305					310					315	
Gly	Pro	Ser	Arg	Arg	Ser	Asp	Leu	Gln	Ser	Leu	Gly	Tyr	Cys	Met	
				320					325					330	
Leu	Lys	Trp	Leu	Tyr	Gly	Phe	Leu	Pro	Trp	Thr	Asn	Cys	Leu	Pro	
				335					340					345	
Asn	Thr	Glu	Asp	Ile	Met	Lys	Gln	Lys	Gln	Lys	Phe	Val	Asp	Lys	
				350					355					360	
Pro	Gly	Pro	Phe	Val	Gly	Pro	Cys	Gly	His	Trp	Ile	Arg	Pro	Ser	
				365					370					375	
Glu	Thr	Leu	Gln	Lys	Tyr	Leu	Lys	Val	Val	Met	Ala	Leu	Thr	Tyr	
				380					385					390	
Glu	Glu	Lys	Pro	Pro	Tyr	Ala	Met	Leu	Arg	Asn	Asn	Leu	Glu	Ala	
				395					400					405	
Leu	Leu	Gln	Asp	Leu	Arg	Val	Ser	Pro	Tyr	Asp	Pro	Ile	Gly	Leu	
				410					415					420	
Pro	Met	Val	Pro												

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PF-0614 US

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<213> Homo sapiens

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Asp	Leu	Leu	Gly	Gln	Phe	Leu	Leu	Tyr	Pro	Pro	His	Gln	Arg	Ile
				20					25					30
Ala	Ala	Ser	Lys	Ala	Leu	Leu	His	Gln	Tyr	Phe	Phe	Thr	Ala	Pro
				35					40					45
Leu	Pro	Ala	His	Pro	Ser	Glu	Leu	Pro	Ile	Pro	Gln	Arg	Leu	Gly
				50					55					60
Gly	Pro	Ala	Pro	Lys	Ala	His	Pro	Gly	Pro	Pro	His	Ile	His	Asp
				65					70					75
Phe	His	Val	Asp	Arg	Pro	Leu	Glu	Glu	Ser	Leu	Leu	Asn	Ser	Glu
				80					85					90
Leu	Ile	Arg	Pro	Phe	Ile	Leu	Glu	Gly						
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Lys	Gly	Gly	Leu	Arg	Asp	Gln	Lys	Thr	Pro	Asp	Asp	His	Glu	Ala
				20					25					30
Glu	Thr	Gly	Ile	Lys	Ser	Lys	Glu	Ala	Arg	Lys	Tyr	Ile	Phe	Asn
				35					40					45
Cys	Leu	Asp	Ala	Cys	Val	Gln	Val	Asn	Met	Thr	Thr	Asp	Leu	Glu
				50					55					60
Gly	Ser	Asp	Met	Leu	Val	Glu	Lys	Ala	Asp	Arg	Arg	Glu	Phe	Ile
				65					70					75
Asp	Leu	Leu	Lys	Lys	Met	Leu	Thr	Ile	Asp	Ala	Asp	Lys	Arg	Ile
				80					85					90
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Leu	Leu	Asp	Phe	Pro	His	Ser	Thr	His	Val	Lys	Ser	Cys	Phe	Gln
				110					115					120
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<213> Homo sapiens

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<223> 119819

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1721

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<213> Homo sapiens

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